

# **A TOOL STOWAGE DEVICE HAVING A PIVOTALLY MOUNTED LID**

The present invention relates to the field of devices for stowing tools. The present invention relates more particularly to such devices for receiving small medical tools, such as drill bits,  
5 reamers, implants or pivots, and for enabling them to be taken out easily by taking hold of said tools via one of their ends only.

US Patent No. 5 482 207 is already known from the prior art. That patent describes a system for facilitating safe recovery and disposal of medical needles. That system serves essentially to  
10 dispose of used syringes or needles so as to avoid any risk of injuring anyone and of contaminating anyone. The concern in that document is to make a tool that is specific to the hospital environment safe when such a tool has been used and must therefore be discarded, but in a safe manner.

That system proposes no solution for presenting medical tools that  
15 are not for once-only use (that are used a multitude of consecutive times) so that they can be taken hold of safely by the user, while also remaining properly sterile, or at least while that portion of said tool which is to be used medically remains  
20 properly sterile.

In addition, a drawback with the prior art is that the dental supplies are soiled when the contents of the refills are picked up by hand. Such handling is necessary, for example, for fastening the drill bit to its drive system or for putting in place the  
25 pivots.

In the state of the art, it is also known that boxes exist, each of which is made up of a container and of a lid.

Thus, European Patent Application EP 567 744 describes a cassette for storing objects, that cassette being mounted to pivot relative to the lid and to the receptacle of a box. The box is opened by lifting the lid via its top portion.

5 US Patent Application No. 5 692 609 describes a box serving to store dental tools. That box comprises a lid pivotally mounted on a receptacle.

French Patent FR 2 796 874 describes a tool box having two end walls and a stowage element inside it. Each of the two walls is  
10 mounted to pivot about an axis relative to the stowage element so as to open / close said box.

German patent DE 298 00 782 describes a storage box whose lid is mounted to pivot on the receptacle, a spring avoiding any untimely opening / closure.

15 US Patent No. 1 684 417 describes a tool kit made up of two portions that open up by pivoting apart from each other.

Another drawback of the prior art relates to the absence of the possibility of opening the box merely by pressing on the lid.

An object of the present invention is to remedy the drawbacks of  
20 the prior art by proposing a tool-stowage device that is simple to use, that is simple to make, and that makes it very easy to sterilize the tools when they are stowed / fastened in said device.

To this end, the present invention provides a stowage device for  
25 stowing tools, substantially in the shape of a parallelepiped, and comprising at least two bodies fastened together via at least two

fastening points, one of said two bodies forming a lid and being mounted to pivot about a pivot axis (X'X) for opening said device, said two fastening points belonging to the pivot axis (X'X) of the lid-forming body, the other body forming a complementary body that is complementary to said lid-forming body, said stowage device being characterized in that said lid-forming body is provided with means suitable for receiving tools, and in that said lid-forming body is provided with a protuberant portion at one of its ends for triggering pivoting of said body by pressing on said protuberant portion.

The present invention is applicable more particularly to stowing medical supplies, in particular dentist's tools such as drill bits and reamers of all diameters and lengths.

In this particular case, a drawback with the prior art devices is that the dental supplies are soiled when the contents of the stowage devices are picked up by hand. Such handling is necessary, for example for fastening the drill bit to its drive system or for putting pivots in place.

Furthermore, the expression "complementary body" is used to mean that the body as associated with the lid-forming body constitutes a closed box or the like, i.e. none of the faces of the stowage device have openings, except for small, localized orifices.

Advantageously, the lid-forming body is provided with a plurality of fastening elements that are secured to or integral with the inside face of said body, and that serve for fastening the tools.

In one embodiment of the invention, the stowage device of the invention is provided with at least one opening abutment and with at least one closure abutment for the lid-forming body.

5 Preferably, the opening abutment is constituted by the bottom of the complementary body or by an abutment fastened to said bottom.

Preferably, the closure abutment is constituted by two lugs on the complementary body.

10 In one embodiment of the invention, the two lugs are disposed in respective ones of two consecutive corners, or they are constituted by an inside lip extending over the length of one of the small sides.

15 Advantageously, the complementary body is provided with a truncated or beveled portion allowing contact to be established with the protuberant portion throughout the path along which the lid-forming body pivots.

In one embodiment of the invention, the fastening points consist of two flanges on the lid-forming body, which flanges are inserted into two slots in the complementary body.

20 Advantageously, the complementary body is provided with a plurality of small-diameter orifices. In this way, the stowage device can be placed in an oven, e.g. an autoclave oven, used for sterilizing the tools stowed in said device.

25 In an advantageous embodiment of the invention, the fastening elements consist of a plurality of hollow tubes or sleeves, each of which serves to receive at least one tool.

In a possibility offered by the invention, the lid-forming body is provided with at least two catches extending perpendicularly to its plane face or "lid", so as to come into contact with at least one tool.

5 Advantageously, the two bodies are made of a plastics material.

In an advantageous aspect of the invention, the complementary body and the lid-forming body present two colors that are different from each other.

10 The present invention also provides a housing provided with an opening/closure system, said housing being characterized in that it contains a plurality of stowage devices having the above-defined characteristics.

15 The invention will be better understood on reading the following description of one embodiment of the invention given merely by way of explanation and with reference to the accompanying figures, in which:

Figure 1 is a perspective view of the stowage device of the invention in a maximum open position in which the lid-forming body is open to the maximum extent;

20 Figure 2 is a perspective view of the stowage device of the invention in a half-open position in which the lid-forming body is half-open;

25 Figure 3 is a perspective view of the stowage device of the invention when the lid-forming body is in the closed position of the device; and

Figure 4 is a perspective view of a housing, without its closure lid, provided with a plurality of recesses for placing and/or fastening tool stowage devices of the invention.

5 The stowage device 1 that is shown in the various figures is made up of a complementary bottom body 2 that is complementary to a lid-forming body 3 that is designed to form the lid for closing the device 1.

10 In the example chosen to illustrate the invention, the additional body 2 comprises a bottom 4 and four walls 5, 6, 7, 8 extending substantially perpendicularly to said bottom 4. The complementary body 2 has two opposite and parallel side large walls 5 and 7 and two opposite and parallel small walls 6 and 8. The front small wall 6 is slightly rounded or convex, towards the outside of the device 1, while the rear small wall 8 is shorter in height than  
15 the front wall 6. Thus, the rear ends of the two side walls 5 and 7 slant down to meet the rear small wall 8. This particular truncated or beveled configuration is designed to allow a protuberant portion 9 of the lid-forming body 3 to pivot and above all to allow contact to be established with said portion  
20 throughout the path along which the lid-forming body 3 pivots.

The top end of the complementary body 2, i.e. each of the top ends of the various walls 5, 6, 7, 8 making up said body 2, is provided with a lip 10 extending substantially perpendicularly to the walls 5, 6, 7, 8. The lip 10 can advantageously have different colors  
25 on different stowage devices 1 of the invention, so that the user can stow specific tools therein, it then being simple for the locations of the tools to be known to the user. This can be

useful in situations in which it is necessary to find a particular tool rapidly.

5 The lid-forming body 3 has a plane lid plate 11. Two arms 12 extend perpendicularly to said lid plate 11 and from the inside face of said plate 11. At the ends of said arms 12, a set of three secured-together hollow tubes extends perpendicularly, i.e. parallel to the plane plate 11. Naturally, the number of said tubes can be increased or reduced depending on the needs of implementation or of use. Said tubes are designed to receive  
10 tools 14, in particular medical tools such as drill bits or pivots for dentists. From the inside face of the plate 11, two catches 15 extend perpendicularly to the plane of said plate 11. Each of said two catches 15 has a periphery that is of concave, circular, or semicircular shape ideally designed to come into contact with a  
15 tool 14 that has a cylindrical portion, or an analogously shaped tool. In the example chosen to illustrate the invention, the tool 16 of cylindrical shape is slid between the catches 15 and the drill bits 14 disposed in the hollow tubes 13 so that said tool 16 is fastened by being in contact with the two elements 14 and 15.

20 At the rear end of the plane plate 11, the lid-forming body 3 also has a protuberant portion 9 serving to enable a finger of a user to be positioned easily for pivoting the lid-forming body 3. The protuberant portion 9 is situated on the other side of the pivot axis X'X relative to the fastening means 13, 15 for fastening the  
25 tools 14 and 16. That is why, pressing on the protuberant portion 9 raises the lid-forming body 3 and opens the stowage device 1, thereby making it possible to take hold of the tools 14 and/or 16. It should be noted that, in the example chosen to illustrate the invention, the protuberant portion 9 is constituted by an edge

strip extending substantially over the entire width of the small side 6 or 8.

5 The lid-forming body 3 and/or the complementary body 2 are made of a transparent material or of a semi-transparent material so as to allow a user to see the tools present in the device of the invention.

10 In this example, the pivot axis X'X is achieved by fastening two fastening points 17 between the lid-forming body 3 and the complementary body 2, said points being situated close to respective ones of the lips 10 or of the top ends of the two side large walls 5 and 7, in the vicinity of said rear small wall 8.

15 The opening abutment, i.e. the abutment serving to block the lip-forming body 3 open in its maximum open position, consists, in this example, of an abutment (not shown in the accompanying figures) extending from the bottom 4 of the complementary body 2, but it is possible to make provision more simply for the bottom 4 itself to form the abutment.

20 The closure abutment, i.e. the abutment serving to stop the lip-forming body 3 closing in its closure position, consists, in this example, of two lugs (not shown in the accompanying figures) situated in respective ones of the corners respectively between the front wall 6 and one of the side large walls 5 and between the front wall 6 and the other of the side large walls 7. Said lugs consist merely of protuberances whose top faces, in contact with  
25 the inside face of the plane plate 11, are plane or substantially plane.



The stowage device of the invention is made of a plastics material whose characteristics enable it to undergo sterilization methods that are well known in the medical and dental field, such as hot sterilization at 180°C or autoclave sterilization or any other means of sterilization.

The housing 18 shown in Figure 4 is provided with a plurality of recesses 19 each designed, in particular, to receive a respective stowage device 1 as described above and as shown in Figures 1 to 3. The housing 18 naturally has a lid for closing it (not shown in Figure 4). Thus, the housing 18 is easy to transport with a plurality of stowage devices 1 inside it, and possibly with each of those devices containing specific tools 14, 16 as indicated by the particular color of its complementary body 2 or of a portion thereof.

In the same way as for the various stowage devices of the invention, in order to enable one or more devices to be sterilized once they are in place in the stowage housing, said housing is provided with at least one orifice in at least one of its faces, and is made of a plastics material whose characteristics enable it to undergo sterilization methods that are well known in the medical and dental field, such as hot sterilization at 180°C or autoclave sterilization or any other means of sterilization.

The invention is described above by way of example. Naturally, the person skilled in the art can implement different variants of the invention without going beyond the ambit of the patent.